

"Dedicated to Public Service"

# THE RADIATOR



W6RHC

IRL #8170



<http://>

P.O.Box 508 Chico, CA 95927-0508

Founded: August 13, 1939

March, 2017

## Coming Events

**O.A.R.S. GENERAL MEETING** Second Friday, of month, 7:00 p.m., at St. Paul's Church Parrish Hall, 1430 Pine St., Oroville

**G.A.R.S. Second Thursday** of month, 6:30 p.m. Lutheran Church Hall, Artois; .

**G.E.A.R.S General Meeting**, third Friday of month, Butte County Search and Rescue Bldg., Chico. Social hour 6:00, meeting at 7:00.

**Board Meetings: 2nd Saturday** of month

**Butte A.R.E.S. MEET:** fourth Friday, at Butte County Search and Rescue Building.

**FCC EXAMS - GEARS VEC**

**First Sunday** of every even numbered month.

At the Butte County Search and Rescue Building,. Written test at 2:00 p.m. For information or pre-registration call Tom Rider -W6JS; 530-893-9211

Club Events: News and items of interest  
GEARS Calendar...all inside.



Picture courtesy EVARC

## The Prez' Says:

QST de KA6GND



What a month our area has seen this past month. A big thank you to our Butte County ARES Emergency Coordinator Dale Anderson, KK6EVX and others who gave of their time and talents during the Oroville Dam evacuation incident. There was a shortage of operators, so this is an opportunity to ask for members of our club to step up and contact Dale to be ARES members. This incident was a prime example of how quickly things can change and the need can arise for quick response to provide communications.

As we know we are a very unique and exclusive group in that through our hobby we alone have the capabilities to provide communications across the street or around the world with many different modes. No other volunteer groups can do quite what we can do, we are a needed asset to our fellow man in times of need.

Being an ARES member does not require a lot of time or fancy stations, it just means that you will be willing to be properly trained and willing to work shifts during an incident. The more willing and available ARES operators means a lighter load on everyone. Please consider this and contact Dale if you can commit to this crucial part of Amateur Radio.

Larry Marcum, KA6GND

GEARS President

[530-345-5399](tel:530-345-5399)

[ka6gnd@gmail.com](mailto:ka6gnd@gmail.com)



## GEARS ARES Activities Report

Dale Anderson KK6EVX-(ARES)

I received a call from Pam Deditch at 4pm Sunday the 12<sup>th</sup> to give me a heads up re evacuation, so I called some people to put them on standby and started to load up the car.

20 minutes later we were called out. I was told to go to the Chico fair grounds. Went in the main gate and almost got waylaid by one of people directing traffic when I told me I was ECOMM but finely got to building A. Talked to Pam and asked where to set up.

Started monitoring the search & rescue frequency and GEARS frequency. When Ted got in asked him to monitor the WD6AXM repeater which is one of the Red Cross designated repeaters. It turned out to be the one with all the information on it. We also found the frequency that the dam operators where using and monitored it.

The first 48 hrs. were where most of the information was passed, after that (thankfully) it was a very boring time for the next seven days.

I emailed Greg Kruckewitt every day updating him on our status and he was updating us with information on people willing to help with gear or manpower. We learned a lot on this event about what gear to use, what frequency to use, how to use them and manage time so as not to burn every one out. Being deployed for a week is a long time. People can get burned out very easily.

With the help of Ted Cochran-N6TBC; Daniel Shelsta-N6APX; RobertRantz-KK6WUG; Doug Poppelreiter KD6LOK Carl Franke-KI6CIU and Gene Wright WA6ZRT we got the job done. With all that transpired I probably forgot someone or something, if so, my apologies.

A heartfelt thank you to all who helped!

Dale KK6EVX

## Space

## Weather

## News

A GASH IN THE SUN'S ATMOSPHERE:

An unusually wide and sinuous hole has opened in the sun's atmosphere, and it is stretching like a gash across the sun's southern hemisphere. A roughly fan-shaped stream of solar wind flowing from the hole is gently buffeting Earth's magnetic field, and it could keep polar magnetic fields in an unsettled state for the rest of February. Long range forecasts suggest the month could end with a moderately strong (G2-class) geomagnetic storm. This is all good news for Arctic sky watchers, who can expect regular episodes of Northern Lights in the nights ahead.

And this recent update on the effect of this anomaly on the sun's surface as of:

Feb.27,2017

SOLAR WIND, INCOMING: A canyon-shaped hole in the sun's atmosphere is spewing a stream of solar wind toward Earth. Polar geomagnetic storms could begin as early as Feb. 28th when the leading edge of the stream reaches our planet. NOAA forecasters estimate a 60% chance of G1-class storms on March 1st when Earth is fully enveloped by the fast-moving solar wind.

Today, March 2, the solar wind is flowing from a large canyon-shaped hole in the sun's atmosphere and is expected to influence Earth for the next two days. Polar sky watchers should remain alert for auroras on Mar. 2nd as NOAA forecasters estimate a 60% chance of continued geomagnetic storms.

Follow information @ [Spaceweather.com](http://Spaceweather.com)

## **FEMA Needs Experienced New Administrator, Former Head KK4INZ Tells Lawmakers**

Now-former Federal Emergency Management Agency (FEMA) Administrator Craig Fugate, KK4INZ, told a US House subcommittee this week that the agency needs to have a new and experienced administrator soon, or it could lose its forward momentum. That sentiment was echoed by House members during a February 28 hearing on FEMA's future held by the House Homeland Security Committee's Emergency Preparedness, Response, and Communications Subcommittee.

"It's not a good job to do on-the-job-training," Fugate told lawmakers. "It's too brutal, and the citizens deserve better." He said that whoever ends up heading the agency should understand that FEMA's role in disaster response "is not about putting FEMA in charge."

"My parting advice for the FEMA team was to continue going big, going early, going fast, and being smart about it," Fugate said in his written testimony. The new FEMA head should build upon "the strides the agency has made since [Hurricane] Katrina." During his time at FEMA, from 2009 until this January, Fugate was a strong supporter of Amateur Radio as a communication resource in disasters.

The hearing was the second in a series that will provide recommendations to the next FEMA Administrator. Former FEMA Administrator R. David Paulison also testified. The officially vacant position is being filled for now by Robert Fenton Jr., FEMA's Region IX administrator.

In a recent [interview](#) on [HamRadioNow](#), Fugate focused on Amateur Radio's role in disasters, explaining to host Gary Pearce, KN4AQ, how he became familiar with emergency management from the ground up, first as volunteer firefighter and paramedic in Florida, and then as head of Alachua County's emergency management program for 10 years. That experience, he said, "was my first intersection with Amateur Radio." He eventually self-studied for his license and passed the test after arriving in Washington.

He told Pearce that FEMA supports state, local, and tribal governments in emergencies and disasters, and will work with whatever resources are available. While it has taken advantage of

While it has taken advantage of radio amateurs and signed a *Memorandum of Understanding* with ARRL in 2014, the agency looks at Amateur Radio "a bit differently."

"We'll work with whoever's up and operating," said Fugate, who has not quite taken off his FEMA hat. He said that could be an ARES group, a RACES group, or an individual radio amateur who may have key information coming out of an area hit by an emergency.

"Training is great," he told Pearce. "We shouldn't think it's exclusionary." He said FEMA needs to remain open to *any* Amateur Radio resource available, "because that person may be the only one up and running."

Fugate told Pearce that under his watch, FEMA tried to be inclusionary, taking advantage of the entire spectrum of radio amateurs, not just the institutionalized emergency communication organizations. "If you have the luxury of being exclusionary," he said, "it's probably not a bad disaster." Fugate said that while he favors formal emergency communications training, those completing the courses may not always be available when a disaster strikes.

Fugate said now that he's home in Florida, he is hoping to have more opportunities to pursue his interest in digital modes. He belongs to the Gainesville Amateur Radio Society ([GARS](#)).



Then-FEMA Administrator Craig Fugate, KK4INZ (left), and then-ARRL President Kay Craigie, N3KN, sign a *Memorandum of Agreement* between FEMA and ARRL in 2014.

[Rick Lindquist, WW1ME, photo]

## **EVACUATION PREPARATIONS**

Steve Sweetman (K6TAZ) - YSARC

Sudden evacuations are a scary thing. You, however, can make them less stressful for yourself and your family by doing some preparations ahead of time. Here are a few suggestions:

1. Have a bug-out-bag (evacuation kit) prebuilt and ready to go. There are numerous websites (including FEMA) that give suggested lists. Also, have a bug-out-bag for your pets.

2. Have the deed to your home and a scanned copy on a thumb drive and your computer. FEMA requires it to be presented in the event of their assistance.

3. Photograph/videotape everything in your home, inside and out. This includes everything in your drawers, closets, boxes, etc. When an emergency occurs you need to have a list of every single inventory item in your home including draperies, utensils, underwear, socks - you name it. Put a copy on the thumb drive and your computer. Photos help when you file an insurance claim.

4. Take photos of you with your family members and pets and add to the thumb drive and your computer. If you get separated these will help you get back together.

5. Grab another item with your home address on it. If you do not have anything use a utility bill.

6. Keep every single receipt with you during evacuation for reimbursement from FEMA or insurance.

7. Call in all your medication refills, if you have down time while waiting.

8. Charge phones at all times. Charge you handheld radio.

9. Ensure all cars have gas. I recommend that you always keep your tank at least  $\frac{1}{2}$  full at all times. If an evacuation warning is issued then keep it at least  $\frac{3}{4}$  full or top it off every evening. Then you do not have to worry about fighting with everyone else to get gas when evacuating. You can get out of town and gas up later. Half a tank will get you 100 to 150 miles.

10. Call your credit card companies and your bank and let them know that you will be doing some out of the area transactions on your card so that the fraud protection does not block them.

11. Listen to your ham radio, TV, and radio to stay aware of what is happening. You'll get a lot of information that can help you.

12. Put together a bug-out-binder that has a list of personnel information (medications, contact information of family, doctors, insurance, etc., logins and passwords, resumes, pet vaccine records), copies of vital documents (birth and marriage certificates, passports, social security cards, etc.), finance records, titles and deeds, wills, power-of attorney, etc. You can also scan many of these documents and add finance records, titles and deeds, wills, power-of attorney, etc. to a thumb drive and your computer/laptop.

13. Emergency cash in small bills. ATM and credit cards may not be working. If you have to evacuate, try to do it early before the roads become clogged. If you're using a thumb drive, use one that is encrypted..

Evacuees could get fuel for their vehicles, where evacuation centers were being set up and road closures. "This became a critical need, as the thousands of people evacuated their houses with 1-hour notice. K6TAZ was operating from his house on a high hill in Yuba County. He was safe from flooding and housed 17 evacuees staying on his property." The net ran on and off from Sunday 4 pm until Wednesday 8 pm. Total operating time was 48 hours and 322 contacts were made. He had reports that the information he was relaying was more informative than the radio or television. Steve was also monitoring the press conferences and would give updated reports. He was in constant communication with the Governor's office of emergency services in Sacramento.

Steve Sweetman (K6TAZ)

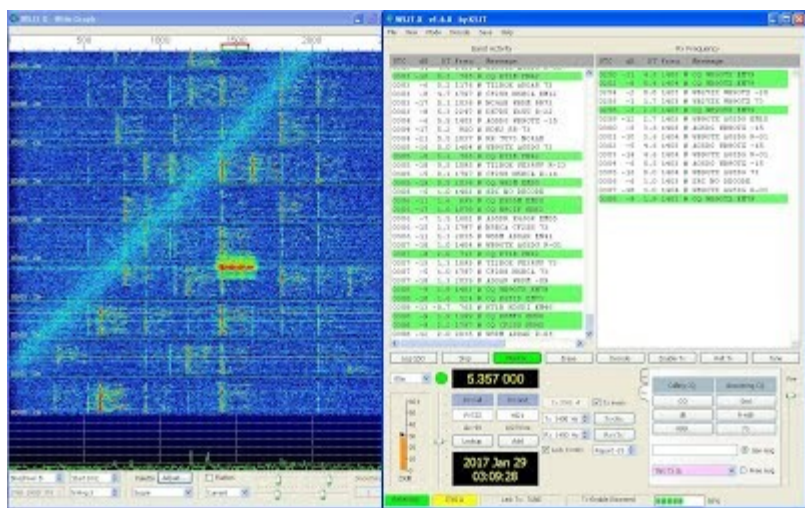
**Courtesy: Valley Ham News-February 2017**  
Editors: Curtis R. Sylvester-José, KF6VFP  
Marsha L. Sylvester-José, KI6CS  
YSARC -Yuba Sutter Amateur Radio Club



## Keep Our Digital Transmissions Legal on 60 Meters

Our decreasing solar activity and residential antenna restrictions have attracted increasing numbers of radio amateurs to operate weak signal digital modes on our lower HF frequencies including 60 meters. The five frequency channels that amateur radio operators share on a secondary basis with US federal government users on 60 meters (5 MHz) pose unique requirements for CW and digital operators. As explained on <http://www.arrl.org/60m-channel-allocation>, US radio amateur emissions on our 60m channels must be precisely centered in the center frequency of each assigned channel. Thus, for example, a CW signal on channel 3 (USB Dial frequency 5357.0 kHz) must be precisely on 5358.5 kHz. The same ARRL page explains that all digital emissions must also be centered in the channel center.

This may appear unreasonable to radio amateurs because a 2.8 kHz channel can accommodate many digital and CW transmissions simultaneously, and requiring multiple stations to operate on the same exact frequency would result in mutual interference. The National Telecommunications and Information Administration (NTIA) explains this requirement in <https://ecfsapi.fcc.gov/file/7021871884.pdf> which states: "Allowing multiple emissions within the necessary bandwidth of the widest authorized modes (2.8 kHz) increases the possibility of harmful interference from secondary amateur stations to primary federal stations, and would make it more difficult for a federal station to identify an interfering amateur station. In addition, NTIA is concerned about the aggregate equivalent isotropically radiated power from multiple amateur stations transmitting within a single 2.8 kHz channel. Accordingly, NTIA requests that [47 C.F.R. Section 97.303\(h\)](#) continue to require that amateur stations transmit only on the five center frequencies allocated to the amateur service." (See <http://www.arrl.org/what-the-fcc-rules-say-97-303-h>)



This screenshot photo shows JT65 signals received on 60m Channel 3 (5357 kHz USB dial frequency) from 0300-0309 UTC on January 29, 2017. In the photo, the 5357 kHz dial frequency is at 0 Hz on the left side of the waterfall and the 5358.5 kHz channel center is at the 1500 Hz mark. Decodes of several US radio amateurs are seen transmitting JT65 emissions simultaneously on various frequencies throughout the channel 3 frequency range 5357-5360 kHz. This is the familiar appearance of a JT65 waterfall display on all other amateur radio bands; however, it does not meet the NTIA requirement that each US radio amateur transmission be centered on the 1500 Hz mark (the 5358.5 kHz channel center frequency).

Our compliance with NTIA requirements is essential for our continued access to the 60m channels and for possible future access to [the new ITU worldwide 60 meter allocation at 5351.5 to 5366.5 kHz](#). (See <http://www.arrl.org/news/view/arrl-asks-fcc-to-allocate-new-5-mhz-band-retain-channels-and-current-power-limit>). Please be aware of these requirements if you intend to operate CW or digital modes on our shared 60m allocations. We are forwarding this concern to ARRL for wider dissemination to the amateur radio community.

Posted on Section Manager's News, Sacramento Valley Division, ARRL— January 29, 2017

# Campus Ham Radio Clubs Encouraged to Boost Vitality through Innovation

02/16/2017

ARRL Public Relations Committee Chairman Scott Westerman, W9WSW, believes collegiate Amateur Radio clubs need to blow away the dust and cobwebs and modernize, in order to attract new members. He urges college and university ham radio clubs to seek common technological ground with younger generations, in order to attract new Amateur Radio licensees.

"We really need to be thinking in terms of...state-of-the-art technology, because that's what 'the kids' are looking for nowadays," Westerman told ARRL Marketing Manager Bob Inderbitzen, NQ1R, during a [brief interview](#) at the 2017 [Orlando HamCation](#) February 10-12, which hosted this year's ARRL Southeastern Division Convention. "The big challenge is how to get them away from their cellphones."

Westerman, a Michigan State University ([MSU](#)) alumnus and executive director of the MSU Alumni Association, recalled his own student days, when MSU Amateur Radio Club ([MSUARC](#)) station W8SH had a Collins S-Line for a station. Founded in 1919, the MSUARC is one of the oldest collegiate ham clubs in the US.

Collegiate clubs need to tap into students' interest in "parallel" technological realms, such as the Maker Movement or those already experimenting with electronics, Westerman said. "At one time or another, we were all in that parallel universe, and there was something that brought us to ham radio," he offered.

Westerman said the MSU club has come up with a program to get students on HF via a remote base. "So, you can get into our state-of-the-art shack, you can check out a control head, a Kenwood TS-480, take it back to your dorm, plug it into the Wi-Fi network, and work the world!"

While access to opportunities to get on the air are important, Westerman said, the availability of Amateur Radio mentors — what he calls "our seasoned generation" of radio amateurs — is also vital. "We're trying to encourage them to reach out and adopt somebody, and to do the same for them that somebody did for us."

For Westerman, that person was his uncle, who took him into his ham shack and got him fascinated with the world of Amateur Radio. "Why can't we be one of those people for some kid in college?" he suggested. "That's the challenge."

The ARRL College Amateur Radio Initiative ([CARI](#)) enjoyed attention throughout HamCation, Inderbitzen recounted. ARRL CEO Tom Gallagher, NY2RF, wearing a "Penn" sweatshirt for his University of Pennsylvania alma mater, welcomed attendees to a Collegiate Amateur Radio Initiative Forum, moderated by Andy Milluzzi, KK4LWR. A graduate student in electrical engineering, Milluzzi highlighted the value of Amateur Radio as a way to meet other people.

"We keep our alumni close," Milluzzi said, explaining how college ham radio clubs help students develop professional networks in their field of study. Quarter Century Wireless Association ([QCWA](#)) Director Ken Simpson, W8EK, shared information about applying for QCWA scholarships administered by the Foundation for Amateur Radio ([FAR](#)). Sterling Coffey, N0SSC, [posted](#) the forum on YouTube. -- *Thanks to Bob Inderbitzen, NQ1R*

MAY YOUR TROUBLES  
☘ BE LESS ☘  
and your  
Blessings  
be MORE.....  
AND NOTHING BUT  
HAPPINESS  
come through your  
☘ >>> door  
IRISH BLESSING

FIVEheartHOME

\*\*\*\*\*



## **Tube of the Month**

### **The WL-530**

**Norm Wilson, N6JV**

By the beginning of WWII in Europe, the British and the United States had been developing their own RADAR systems while sharing information with each other. The British had their Chain Home system that became famous due to its crucial role during the Battle of Britain. The United States developed a similar system at Fort Monmouth, NJ, that was designed to be flexible as they wanted a set that could be fixed or portable. Westinghouse got the contract to make a production version of an experimental tube and they designated it the WL-530 (VT-122). The new tube would be used in the RADAR system designated the SCR-270. The first completed 270 was delivered in early 1939. The 530 is an 8 kW, water cooled triode that could produce 75 to 100 kW pulses. These used a thoriated tungsten filament which was new to tubes of this size. A pair of 530s produced 150 kW output at 120 MHz with this set. Maximum range was about 150 miles. Four vans hauled all the components and the control shack.

The new sets were delivered to Fort Hancock, NJ, where they were tested before being deployed. The testing must have been done by some hams as they describe aiming at storage tanks off Sandy Hook and while one operator watched the screen, the other climbed the array and banged on the tuning stubs with a long wooden stick until the signal peaked.

The military was not enthusiastic about the new equipment and its deployment was delayed. In Hawaii, younger officers tried to get the system operating in spite of resistance from their commanders. The sets were eventually installed. Sets were also deployed at the Panama Canal and in the Philippines. On December 7, 1941, four of the sets had been deployed around the island of Oahu. The installation at Opana Point on the North Shore was in operation and spotted the Japanese planes heading for Pearl Harbor at a range of 130 miles. Training and experience were in short supply and the information wasn't acted upon in time to prepare an effective defense. You saw the movie.

The frequency of the system wasn't very high and better RADARS were rapidly developed, but the SCR-270 system was in use long after the War. It turns out that the widths of the props on military aircraft of the day were close to a half wave at the 106 MHz operating frequency so they made great reflectors.



Visit the museum at [N6JV.com](http://N6JV.com)

**Norm N6JV**



#### Club Officers: (Board of Directors)

President .....Larry Marcum-ka6gnd  
Vice President..... Stephen Wolske-kf6hss  
Secretary ..... Michael Favor k6fav  
Treasurer..... Rick Hubbard-ki6vos  
Past President .....Anna Horn Kg6goa  
Director..... Tom Rider-W6JS  
Director.....Gene Wright-wa6zrt  
Director..... Dale Anderson kk6eys

#### Club Meetings:

General Meeting Third Friday 7:00 PM

Board Meeting Second Saturday

GEARS Club Net

Tuesdays 7:30 PM 146.850 MHz-PL 110.9

GARS Club Net:Monday,7:00 pm 147.105+Mhz  
PL 110.09

Thursdays Simplex Net 7:30 p.m. 146.52

Sacramento Valley Traffic Net

Nightly 9:00 PM 146.850 MHz-PL 110.9

#### ARES Nets:

Butte Mondays 20:00 146.850 MHz-PL 110.9

Yuba Sutter Thursdays 19:00 146.085+MHz PL  
127.3

Glenn Thursday 19:30 147.105 MHZ +PL 100.0

#### Other Nets:

Willie Net 8:00 PM Mondays 1930 kHz

Sac Valley Section Net—7:00 PM 2<sup>nd</sup> Wed of the  
month 146.085 MHz+PL 127.3

440 Wed. Night 8:00 PM Wednesday 440.650  
MHz

Golden Bear 7:00 PM Daily 3975 kHz Western  
Public Service System (WPSS)

7:30 PM 3952 kHz

ARISS (International Space Station) Uplink

144.490 MHz Downlink 145.800 MHz

Hope-1 satellite: all uplinks are in 145Mhz band:

All downlinks are in 435Mhz band

...California Traffic Net: 3906 KHz nightly @6:00  
pm .For traffic listing & @6:30 p.m. for roll call.

#### The GEARS Newsletter Staff:

Editor and Publisher.....Dorothy Post

Printing & Distribution snail mail: Evelyn Weir

Website...Michael Favor-N6FAV

The Radiator is a monthly publication of the  
Golden Empire Amateur Radio Society (GEARS).  
It is the policy of the Editor to publish all materi-  
al submitted by the membership provided such  
material is in good taste, relevant to amateur  
radio, of interest to GEARS members, and space  
is available. Please send all submissions to the  
Editor – Dorothy Post by the last day of the  
month through the following medium: E-mail:  
dj@posthouse.us

## GEARS Pilots Online Payments via PayPal

GEARS is pleased to announce a new convenience for  
our members.

Online payments via PayPal are now accepted (*e.g.*,  
Dues, Donations, etc.) under a pilot program.

Before making this feature widely available, the Pay-  
ment Pilot Program will run for several weeks to en-  
sure a smooth and enjoyable experience for users.

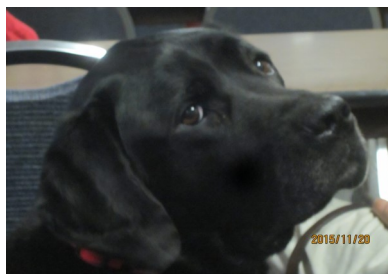
If you'd like to submit a payment during the Payment  
Pilot Program (*e.g.*, to make a repeater donation),  
please send an Email to GEARS-Technographer (Rick  
Hubbard, KI6VOS) and he will reply with a URL to the  
Pilot Program Payment page.

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**Brinkley Says: Hey Hams a hats up !**



March 6, 2017: Spring Forward, Fall  
Back time is here again! So supposedly this is spring-  
time & you are expected to set your clocks forward  
one whole hour on March 6th. I guess that's by 2:00  
a.m., so you won't sleep in Sunday morning and miss  
out on anything...or whatever you crazy humans do (I  
did not say hams you notice.) How could I? I live with  
a ham & don't want him packing my bones and ship-  
ping me outdoors! I may be  
k9dog, but I am not cra-  
zy...oh no! Not at all!





Date	Time	Event	Location	Contact party
Sunday, April 2, 2017	2:00 p.m.	VEC—Exams	Butte Co. Search & Rescue Building 2591 Morrow Lane, Chico	Tom Rider 530-893-9211
Thursday March 9, 2017 Second Thursday each month	6:00 p.m. Board and General Meeting .	GARS-Glenn Glenn Amateur Radio Society \\	Lutheran Church Hall: Artois	Mike Ellithorpe 530-518-3730
Friday, March 10, 2017 Second Friday each month	General Meeting	OARS Oroville Amateur Radio Society General Meeting	St Paul's Church Parrish Hall 1430 Pine Street Oroville	Ron Osborne-kd7uhf 530 589 1834 kd7uhf@yahoo.com
Saturday March 11, Second Saturday Each month	Board meet: 9:00 a.m.	GEARS Board of Di- rectors Meet Members are Invited!	Blood Source Blood Source Bldg 555 Rio Lindo Ave	Larry Marcum, KA6GND 530 345 5399 ka6gnd@gmail.com
Friday March 17,, 2017 Third Friday each month.	General Meeting Social 6:00 p.m. Program: At 7:00 General meeting 8:00 p.m.	GEARS Golden Empire Amateur Radio Society	Butte County Search and Rescue Building 2591 Morrow Lane Chico	Larry Marcum, KA6GND 530 345 5399 ka6gnd@gmail.com
				

**Bring Your Old Eyeglass Wear to GEARS for the  
LIONS Club Eyeglasses donation Box**

Prescription glasses, or magnifying eyeglasses, sunglasses, but no loose lens—frames are a necessity.  
This is a club community effort in which all members may participate with minimal effort.  
Let us FILL that box up!!!!

**!Donations to GEARS are TAX DEDUCTIBLE!**

We are a 501 c 3 organization, and as such, donations, cash, or materials, donated to GEARS are Tax deductible. When you donate to GEARS, be sure you receive a letter of acknowledgment from our Secretary as proof of the donation and its value for the State and Federal Tax Authorities. This is a win-win for GEARS and for you, the member or the party donating!